James B Aimone

List of Publications by Year
in descending order

76 papers	6,826 citations	201385 27 h-index	205818 48 g-index
77 all docs	77 docs citations	77 times ranked	8146 citing authors

#	Article	IF	Citations
1	New neurons and new memories: how does adult hippocampal neurogenesis affect learning and memory?. Nature Reviews Neuroscience, 2010, 11, 339-350.	4.9	1,766
2	Potential role for adult neurogenesis in the encoding of time in new memories. Nature Neuroscience, 2006, 9, 723-727.	7.1	589
3	Resolving New Memories: A Critical Look at the Dentate Gyrus, Adult Neurogenesis, and Pattern Separation. Neuron, 2011, 70, 589-596.	3.8	570
4	Regulation and Function of Adult Neurogenesis: From Genes to Cognition. Physiological Reviews, 2014, 94, 991-1026.	13.1	516
5	Synapse formation on neurons born in the adult hippocampus. Nature Neuroscience, 2007, 10, 727-734.	7.1	499
6	Computational Influence of Adult Neurogenesis on Memory Encoding. Neuron, 2009, 61, 187-202.	3.8	335
7	IGF-I instructs multipotent adult neural progenitor cells to become oligodendrocytes. Journal of Cell Biology, 2004, 164, 111-122.	2.3	294
8	Identification of Astrocyte-expressed Factors That Modulate Neural Stem/Progenitor Cell Differentiation. Stem Cells and Development, 2006, 15, 407-421.	1.1	273
9	Adult neurogenesis: integrating theories and separating functions. Trends in Cognitive Sciences, 2010, 14, 325-337.	4.0	262
10	Mecp2 deficiency leads to delayed maturation and altered gene expression in hippocampal neurons. Neurobiology of Disease, 2007, 27, 77-89.	2.1	196
11	Cholinergic Input Is Required during Embryonic Development to Mediate Proper Assembly of Spinal Locomotor Circuits. Neuron, 2005, 46, 37-49.	3.8	138
12	N2A: a computational tool for modeling from neurons to algorithms. Frontiers in Neural Circuits, 2014, 8, 1.	1.4	113
13	Spatial and temporal gene expression profiling of the contused rat spinal cord. Experimental Neurology, 2004, 189, 204-221.	2.0	93
14	Low excitatory innervation balances high intrinsic excitability of immature dentate neurons. Nature Communications, 2016, 7, 11313.	5.8	83
15	Temporally selective contextual encoding in the dentate gyrus of the hippocampus. Nature Communications, 2014, 5, 3181.	5.8	82
16	Energy Scaling Advantages of Resistive Memory Crossbar Based Computation and Its Application to Sparse Coding. Frontiers in Neuroscience, 2015, 9, 484.	1.4	77
17	Molecular layer perforant path-associated cells contribute to feed-forward inhibition in the adult dentate gyrus. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 9106-9111.	3.3	73
18	Training deep neural networks for binary communication with the Whetstone method. Nature Machine Intelligence, 2019, 1, 86-94.	8.3	67

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19	Modeling new neuron function: a history of using computational neuroscience to study adult neurogenesis. European Journal of Neuroscience, 2011, 33, 1160-1169.	1.2	59
20	A historical survey of algorithms and hardware architectures for neural-inspired and neuromorphic computing applications. Biologically Inspired Cognitive Architectures, 2017, 19, 49-64.	0.9	54
21	Intermittent fasting enhances long-term memory consolidation, adult hippocampal neurogenesis, and expression of longevity gene Klotho. Molecular Psychiatry, 2021, 26, 6365-6379.	4.1	54
22	Development of GABAergic inputs controls the contribution of maturing neurons to the adult hippocampal network. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 4290-4295.	3.3	53
23	Routes to calcified porous silicon: implications for drug delivery and biosensing. Physica Status Solidi A, 2003, 197, 336-339.	1.7	42
24	Neurogenesis deep learning: Extending deep networks to accommodate new classes. , 2017, , .		39
25	Dopaminergic inputs in the dentate gyrus direct the choice of memory encoding. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E5501-10.	3.3	34
26	A Signal Processing Approach for Cyber Data Classification with Deep Neural Networks. Procedia Computer Science, 2015, 61, 349-354.	1.2	31
27	High-Performance Computing in Neuroscience for Data-Driven Discovery, Integration, and Dissemination. Neuron, 2016, 92, 628-631.	3.8	31
28	Neural algorithms and computing beyond Moore's law. Communications of the ACM, 2019, 62, 110-110.	3.3	30
29	Sparse Coding for N-Gram Feature Extraction and Training for File Fragment Classification. IEEE Transactions on Information Forensics and Security, 2018, 13, 2553-2562.	4.5	28
30	A hypothesis for temporal coding of young and mature granule cells. Frontiers in Neuroscience, 2013, 7, 75.	1.4	25
31	Computational Modeling of Adult Neurogenesis. Cold Spring Harbor Perspectives in Biology, 2016, 8, a018960.	2.3	25
32	Put Them Out to Pasture? What Are Old Granule Cells Good for, Anywayâ€¦?. Hippocampus, 2010, 20, 1124-1125.	0.9	20
33	Solving a steady-state PDE using spiking networks and neuromorphic hardware. , 2020, , .		17
34	A Combinatorial Model for Dentate Gyrus Sparse Coding. Neural Computation, 2017, 29, 94-117.	1.3	16
35	Dynamic Programming with Spiking Neural Computing. , 2019, , .		16
36	Neuromorphic scaling advantages for energy-efficient random walk computations. Nature Electronics, 2022, 5, 102-112.	13.1	16

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37	Constant-Depth and Subcubic-Size Threshold Circuits for Matrix Multiplication. , 2018, , .		15
38	Computing with Spikes: The Advantage of Fine-Grained Timing. Neural Computation, 2018, 30, 2660-2690.	1.3	15
39	Spiking Neural Algorithms for Markov Process Random Walk. , 2018, , .		13
40	Perspectives for computational modeling of cell replacement for neurological disorders. Frontiers in Computational Neuroscience, 2013, 7, 150.	1.2	12
41	Crossing the Cleft: Communication Challenges Between Neuroscience and Artificial Intelligence. Frontiers in Computational Neuroscience, 2020, 14, 39.	1.2	12
42	A Roadmap for Reaching the Potential of Brainâ€Derived Computing. Advanced Intelligent Systems, 2021, 3, 2000191.	3.3	10
43	Composing neural algorithms with Fugu. , 2019, , .		10
44	The energy scaling advantages of RRAM crossbars. , 2015, , .		8
45	Spiking network algorithms for scientific computing. , 2016, , .		8
46	A novel digital neuromorphic architecture efficiently facilitating complex synaptic response functions applied to liquid state machines. , 2017, , .		8
47	International Neuroscience Initiatives through the Lens of High-Performance Computing. Computer, 2018, 51, 50-59.	1.2	8
48	Dynamic Analysis of Executables to Detect and Characterize Malware. , 2018, , .		8
49	Provable Neuromorphic Advantages for Computing Shortest Paths. , 2020, , .		8
50	Unbiased characterization of high-density oligonucleotide microarrays using probe-level statistics. Journal of Neuroscience Methods, 2004, 135, 27-33.	1.3	7
51	Neural computing for scientific computing applications. , 2017, , .		7
52	Provable Advantages for Graph Algorithms in Spiking Neural Networks. , 2021, , .		7
53	Optimization-based computation with spiking neurons. , 2017, , .		6
54	Quantifying neural information content: A case study of the impact of hippocampal adult neurogenesis. , 2016, , .		5

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55	A Spike-Timing Neuromorphic Architecture. , 2017, , .		5
56	Truly Heterogeneous HPC: Co-design to Achieve What Science Needs from HPC. Communications in Computer and Information Science, 2020, , 349-365.	0.4	5
57	Repeated play of the SVM game as a means of adaptive classification. , 2015, , .		4
58	Low-Power Deep Learning Inference using the SpiNNaker Neuromorphic Platform. , 2019, , .		4
59	Memristors learn to play. Nature Electronics, 2019, 2, 96-97.	13.1	3
60	Memristors as Synapses in Artificial Neural Networks: Biomimicry Beyond Weight Change. Advances in Information Security, 2014, , 135-150.	0.9	3
61	Assessing a Neuromorphic Platform for use in Scientific Stochastic Sampling. , 2021, , .		3
62	Adult Neurogenesis in the Dentate Gyrus. , 2014, , 409-429.		2
63	Training neural hardware with noisy components. , 2015, , .		2
64	Spiking Neural Streaming Binary Arithmetic. , 2021, , .		2
65	ADULT NEURAL PROGENITOR CELLS IN CNS FUNCTION AND DISEASE. , 2008, , 181-200.		1
66	(Invited) Development, Characterization, and Modeling of a TaOx ReRAM for a Neuromorphic Accelerator. ECS Transactions, 2014, 64, 37-42.	0.3	1
67	MapReduce SVM Game. Procedia Computer Science, 2015, 53, 298-307.	1.2	1
68	Neuromorphic data microscope. , 2017, , .		1
69	Tracking Cyber Adversaries with Adaptive Indicators of Compromise. , 2017, , .		1
70	Resilient Computing with Reinforcement Learning on a Dynamical System: Case Study in Sorting. , 2018, , .		1
71	Motoneuron expression profiling identifies an association between an axonal splice variant of HDGF-related protein 3 and peripheral myelination. Journal of Biological Chemistry, 2020, 295, 12233-12246.	1.6	1
72	Adult Neurogenesis: Implications on Human And Computational Decision Making. Lecture Notes in Computer Science, 2013, , 531-540.	1.0	1

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73	Neural-Inspired Anomaly Detection. Springer Proceedings in Complexity, 2018, , 202-209.	0.2	1
74	Computing with dynamical systems. , 2016, , .		0
75	Computational Perspectives on Adult Neurogenesis. , 2017, , 425-441.		0
76	Sparse Data Acquisition on Emerging Memory Architectures. IEEE Access, 2019, 7, 1685-1693.	2.6	0